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EXAMINER

BANGACHON, WILLIAM L

ART UNIT PAPER NUMBER

2635

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/474,660

Applicant(s)

LANSFORD ET AL.

Examiner

William Bangachon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 7-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 7-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Examiner's Response

1. This Office Action is in response to the amendment filed 23 January 2003 and is believed to be fully responsive to the arguments presented. The presentation of claims in view of the arguments and the present state of the prior art were considered. The Examiner respectfully traverses Applicant's arguments. It is the Examiner's position that claims 1-2, 4 and 7-30 stands unpatentable for the reasons set forth in this Office action:

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "HomeRF device", the "Bluetooth device", "contention-free period", "a computer system programmed to implement the method of claim 10", and "set of instructions" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Response to Arguments

3. Applicant's arguments have been fully considered but they are not persuasive.

4. Applicant argues that "Smith fails to teach or suggest Applicant's invention as claimed, including, for example, Applicant's claimed limitation of operating a first device

at a first hopping frequency during a first period of time to communicate with a second device, and at a second hopping frequency during a second period of time to communicate with a third device during a contention free period" (paragraph bridging pages 8 and 9).

The examiner respectfully traverses applicant's argument in that Smith teaches a method of communicating between electronic devices (100, 170, 140) as shown in figure 1 (see whole document) comprising:

operating a first device (100 or CM) at a first hopping frequency (SF0) during a first period of time (T0) and at a second hopping frequency (SF1) during a second period of time (T1) as shown in the table of figure 5;

operating a second device (170 or S1) at the first hopping frequency (SF0), the second device (S1) communicating with the first device (CM) during the first period of time (T0); and

operating a third device (140 or S2) at the second hopping frequency (SF1), the third device (S2) communicating with the first device during the second period of time (T1) and during a contention-free period. See column 8, lines 41-65. **The communication between the first and second devices and the first and third devices are clearly during contention-free periods because the third and second devices have non-overlapping assigned time-slot and frequency by which to communicate with the first device at any given time** (col. 7, lines 3-5; col. 9, lines 17-21). Further, each device (S1, S2) is assigned a unique time slot and frequency on which to transmit and receive (as shown in figure 6) to avoid interference/contention

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among the devices {col. 7, lines 23-26}. And that all slave station (170 or S1, 140 or S2) transmissions are synchronized to the control unit (100 or CM) transmissions, thereby preventing any two stations from concurrently using the same frequencies for either transmitting to or receiving from the control unit (100) {abstract}. **No two stations (S1, S2) use the same time slot and frequency at any given time.** Clearly, this is analogous to the claimed "operating a first device at a first hopping frequency during a first period of time to communicate with a second device, and at a second hopping frequency during a second period of time to communicate with a third device during a contention free period".

5. Applicant argues that "Antunnes and Nataranjan fail to teach or suggest Applicant's invention as claimed, including, for example, Applicant's claimed limitation of operating a first device at a first hopping frequency during a first period of time to communicate with a second device, and at a second hopping frequency during a second period of time to communicate with a third device during a contention free period" (page 10, 1st paragraph).

The examiner respectfully traverses applicant's argument in that Antunnes et al in view of Nataranjan, teach of a synchronized frequency hopped schedule in a communication system wherein each controller and transceiver has their own hop clock and hop table. A data interface, which includes commands and procedures for synchronizing the hop clocks and hop tables according to the claimed invention, is defined between the controller and the transceiver as shown in figures 1-6A of

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Antunnes et al. In particular, figures 2 and 3 shows each time and frequency at which each device (or slave station 130 shown in figure 7) is synchronized when communicating with the master station/controller. **Clearly, this is analogous to the claimed "operating a first device at a first hopping frequency during a first period of time to communicate with a second device, and at a second hopping frequency during a second period of time to communicate with a third device during a contention free period" since each device is synchronized to communicate with the master station at unique time slot and frequency.**

For the reasons stated above, rejection to claims 1-2, 4 and 7-30 are maintained in this Office action.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-14, 16-17, 21-23 and 25, are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,850,036 (Smith).

With regards to claims 1-6 and 9, Smith teaches of a method of communicating between electronic devices (100, 170, 140) as shown in figure 1 (see whole document) comprising:

operating a first device 100 (CM) at a first hopping frequency (SF0) during a first period of time (T0) and at a second hopping frequency (SF1) during a second period of time (T1) as shown in the table of figure 5;

operating a second device 170 (S1) at the first hopping frequency (SF0), the second device (S1) communicating with the first device (CM) during the first period of time (T0); and

operating a third device 140 (S2) at the second hopping frequency (SF1), the third device (S2) communicating with the first device during the second period of time (T1). See column 8, lines 41-65. The communication between the first and second devices and the first and third devices are clearly during contention-free periods because the third and second devices have non-overlapping or assigned frequencies by which to communicate with the first device at any given time (col. 7, lines 3-5; col. 9, lines 17-21). In that each device is assigned a unique time slot and frequency on which to transmit and receive (as shown in figure 6) to avoid interference among the devices {col. 7, lines 23-26}. All slave station (170, 140) transmissions are synchronized to the control unit (100) transmissions, thereby preventing any two stations from concurrently using the same frequencies for either transmitting to or receiving from the control unit (100) {abstract}. No two stations (S1, S2) use the same time slot and frequency at any given time.

In claims 7 and 8 (refer to figures 3 and 4), sending a signal (303 or 404) from the third device to the first device, the signal requesting communication with the first device; and determining a time frame (304 or 405) for the second period of time in response to receiving the signal and indicating the time frame to the second device. See col. 4, lines 60-65; col. 5, lines 21-35.

Claims 10-14 recites the claim limitations of claims 1-9 and therefore rejected for the same reasons.

In claims 16 and 21-23 and 25, a computer system (figure 1, 100) programmed to implement the method of claim 10.

Claim 17 recites the claim limitations of claims 1-9 and 16 and therefore rejected for the same reasons further comprising a transmitter (130) and a processor/CPU (102)

11. Claims 15, 18-20, 24 and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,850,036 (Smith) in view of US 5,241,542 (Nataranjan et al).

In claims 15, 18-20 and 24, Smith does not disclose expressly the first and second devices as a Bluetooth device and a HomeRF device. Nataranjan et al, in the same field of endeavor (see field of invention), teach that multi-access protocol in a

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wireless link is conventional (background of the invention). Although the devices in the system of Nataranjan et al are handheld or portable computers with wireless communication capabilities, such protocols would include Bluetooth and HomeRF to one of ordinary skill in the art. A multi-access protocol such a Bluetooth and HomeRF would have been obvious in the system of Smith because the system of Smith is capable of both voice or data communications and a variety of communication systems having different operating characteristics can be accommodated (Smith, col. 3, lines 18-27). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to have a scheduled multi-access protocol such as Bluetooth and HomeRF in the system of Smith, as evidenced by Nataranjan et al, because the system of Smith can accommodate a variety of communication systems having different operating characteristics and is capable of both voice or data communications.

Claims 26-30 recites the combination of claims 10-15 and therefore rejected for the same reasons.

12. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,414,731 (Antunnes et al) in view of US 5,241,542 (Nataranjan et al).

With regards to claims 1-30, Nataranjan et al, teach of a frequency hopped multi-access protocol comprising of first (26 or 28), second (10 or 14) and third (12 or 16) devices. Nataranjan et al does not disclose expressly a synchronized frequency

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hopped schedule according to the claimed invention. However, these claim limitations would have been obvious in the system of Nataranjan et al, as evidenced by Antunnes et al, to one of ordinary skill in the art. Antunnes et al teach, in the same field of endeavor, teach of a synchronized frequency hopped schedule in a communication system wherein each controller and transceiver has their own hop clock and hop table. A data interface, which includes commands and procedures for synchronizing the hop clocks and hop tables according to the claimed invention, is defined between the controller and the transceiver as shown in figures 1-6A of Antunnes et al. In particular, figures 2 and 3 shows each time and frequency at which each device (or slave station 130 shown in figure 7) is synchronized when communicating with the master station/controller. **Clearly, this is analogous to the claimed “operating a first device at a first hopping frequency during a first period of time to communicate with a second device, and at a second hopping frequency during a second period of time to communicate with a third device during a contention free period” since each device is synchronized to communicate with the master station at unique time slot and frequency.** Having hop clocks in both the controller and in the radio minimizes the cost of the data communication interface and to ensure that the quality of the hop clock signals is not comprised by noise present on the interface (Antunnes et al , col. 3, lines 29-33). Clearly, this would be beneficial in the system of Nataranjan et al to one of ordinary skill in the art. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to have a synchronized frequency hopped schedule in a communication system wherein each controller and transceiver have their

own hop clock and hop table and a data interface which includes commands and procedures for synchronizing the hop clocks and hop tables according to the claimed invention in the system of Nataranjan et al, as evidenced by Antunnes et al, because having hop clocks in both the controller and in the radio minimizes the cost of the data communication interface and to ensure that the quality of the hop clock signals is not comprised by noise present on the interface.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Examiner Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Bangachon whose telephone number is 703-305-2701. The examiner can normally be reached on 4/4/10.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on 703-305-4704. The fax phone numbers for the organization where this application or proceeding is assigned is 703-872-9314 for regular and After Final formal communications. The examiner's fax number is 703-746-6071 for informal communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

William L Bangachon
Examiner
Art Unit 2635

January 29, 2003

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

